

REMARKS

Claims 1-6, 8-18 and 21-27 are pending in this application. Claims 4-6, 8-12, 15-18 and 25-27 have been withdrawn by the Examiner as being drawn to non-elected inventions.

I. THE CLAIM REJECTIONS UNDER 35 U.S.C. § 103 SHOULD BE WITHDRAWN

Claims 1-3, 13, 14, 21-24 are rejected under 35 U.S.C. § 103(a) ("Section 103(a)") as allegedly being unpatentable over Kaddurah-Daouk (U.S. Patent No. 5,998,458, "Kaddurah-Daouk") in view of Meisner (U.S. Patent No. 4,772,591, "Meisner"), Grant *et al.* (U.S. Patent No. 5,888,553, "Grant"), Beale (U.S. Patent No. 5,756,469, "Beale '469"), and Beale *et al.* (U.S. Patent No. 5,716,926, "Beale '926"). Specifically, the Examiner alleges that it would have been *prima facie* obvious to a person of ordinary skill in the art, at the time the invention was made, to employ creatine pyruvate composition, which is essentially free of one or more of dihydrotriazine, dicyano-diamide, or creatinine, for treating connective tissue degenerative disorders, including those unrelated to weight gain or weight loss, such as osteoporosis, osteoarthritis or periodontitis, or for accelerating wound healing, promoting growth of connective tissue (cartilage). For the following reasons, Applicants disagree.

To reject claims in an application under 35 U.S.C. § 103, the Patent Office bears the initial burden of establishing a *prima facie* case of obviousness. See *In re Bell*, 26 USPQ2d 1529, 1530 (Fed. Cir. 1993); MPEP 2142. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Second, there must be a reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988). Third, the prior art reference(s) must teach or suggest all the claim limitations. *Litton Indus. Products, Inc. v. Solid State Systems*, 755 F.2d 158, 164 (Fed. Cir. 1985). The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Federal Circuit has clearly stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 837 F.2d at 1075.

Applicants submit that the rejection under Section 103(a) is in error because the Patent Office has failed to establish a *prima facie* case of obviousness.

Turning to the references cited by the Examiner, first, Kaddurah-Dauouk discloses the use of creatine compounds for treating or preventing a metabolic disorder related to body weight control such as obesity, and its associated diseases (see Kaddurah-Dauouk, Abstract). As noted by the Examiner, there is no disclosure of creatine pyruvate or the particular amount to be administered, as recited in claim 1. The Examiner also acknowledged that Kaddurah-Daouk does not disclose methods for promoting growth and mineralization of bone; improving acceptance and osseous integration of bone implants; or accelerating healing, as recited in claims 22-24.

The second reference, Meisner, discloses methods and compositions for accelerating wound healing by reducing or preventing tissue degenerative effects of the inflammation associated with the natural wound healing process and promoting connective tissue growth in the wound (see Meisner, Abstract). In particular, the wound-healing composition comprises, *inter alia*, an anti-inflammatory substance such as creatine (see Meisner, col. 4, line 59; col. 5, line 17; and claim 1 at col. 15, line 3). However, like Kaddurah-Daouk, no where does Meisner teach or suggest the use of creatine pyruvate or the particular amount to be administered, as recited in claim 1. Nor does Meisner teach or suggest methods for promoting growth and mineralization of bone; improving acceptance and osseous integration of bone implants; or accelerating healing, as recited in claims 22-24.

The third reference, Grant, discloses a non-steroidal anabolic composition for the building and sustaining of muscle mass in a human or animal that enables the body to synthesize and maintain muscle at a mass and in a manner optimally suited to the genetic makeup of the human or animal (see Grant, Abstract). In particular, the non-steroidal anabolic composition comprises a chromium salt, complex or chelate, and a magnesium glycyl glutamate chelate (see Grant, Abstract). Optionally, an additional nutrient such as creatine or a salt thereof may be included (see Grant, Abstract). Grant does not teach or suggest the use of creatine pyruvate or the particular amount to be administered, as recited in claim 1. Nor does Grant teach or suggest methods for promoting growth and mineralization of bone; improving acceptance and osseous integration of bone implants; or accelerating healing, as recited in claims 22-24.

The last two references, Beale '469 and Beale '926, disclose the use of pyruvate in combination with a cortisol blocker (Beale '469) or anabolic protein composition (Beale '926) to produce a synergistic effect in increasing lean body mass or muscle tissue of a

mammal (see Beale '469, Abstract; and Beale '926, Abstract). Beale '469 additionally discloses the use of ipriflavone as a cortisol blocker at 600 mgs per day to treat women suffering from osteoporosis (see Beale '469, col. 3, lines 46-49) and mentions pyruvyl-creatine as a pyruvate precursor (see Beale '469, col. 4, lines 39-40). Beale '926 additionally discloses the treatment of osteoporosis by the administration of calcium pyruvate (see Beale '926, col. 5, lines 17-18). Neither Beale '469 nor Beale '926 teach or suggest the use of creatine pyruvate or the particular amount to be administered, as recited in claim 1. Beale '469 and Beale '926 also do not teach or suggest methods for promoting growth and mineralization of bone; improving acceptance and osseous integration of bone implants; or accelerating healing, as recited in claims 22-24.

Applicants submit that the claimed invention is not obvious over Kaddurah-Daouk in view of Meisner, Grant *et al.*, Beale '469, and Beale '926. There is no suggestion or motivation in any of Kaddurah-Daouk, Meisner, Grant, Beale '469, and Beale '926 to modify the references or to combine the reference teachings. Kaddurah-Daouk, Meisner, Grant, Beale '469, and Beale '926 relate to three different technical fields. As discussed above, Kaddurah-Daouk teaches a method of treating a metabolic disorder such as obesity or severe weight loss, Meisner teaches a method of healing wounds, and each of Grant, Beale '469, and Beale '926 teaches a method of increasing muscle mass. Applicants submit that one skilled in the art of metabolic disorder treatment would have no motivation to modify or combine the teaching of Kaddurah-Daouk with Meisner, Grant, Beale '469, and Beale '926. Likewise, one skilled in the art of wound healing would have no motivation to apply the teaching of Kaddurah-Daouk, Grant, Beale '469, or Beale '926 to Meisner. Nor would one skilled in the art of body building have motivation to modify or combine the teachings of Grant, Beale '469, or Beale '926 with Kaddurah-Daouk and/or Meisner. Therefore, based on these cited references, one skilled in the art would have no reasonable expectation of arriving at the claimed invention.

In addition, Kaddurah-Daouk, Meisner, Grant, Beale '469, and Beale '926, either alone or together, do not teach or suggest each and every claim limitation. The Examiner admits that Kaddurah-Daouk fails to teach or suggest creatine pyruvate (see Office Action at page 2, point no. 4). Meisner and Grant also fail to teach or suggest the use of creatine pyruvate.

Although Beale '469 discloses pyruvyl-creatine as a pyruvate precursor (see Beale '469, col. 4, lines 39-40), no where does Beale '469 teach or suggest the use of pyruvyl-creatine to treat a bone or cartilage defect, as recited in claim 1; to promote bone growth and

mineralization, as recited in claim 22; to improve bone acceptance and osseous integration, as recited in claim 23; or to accelerate healing, as recited in claim 24. While Beale '469 mentions the use of the cortisol blocker ipriflavone to treat osteoporosis (see Beale '469, col. 3, lines 46-49), there is no teaching or suggestion in Beale '469 that any other cortisol blocker can be used to treat osteoporosis. Nor does Beale '469 teach or suggest that pyruvate or pyruvyl-creatine can be used to treat osteoporosis. Applicant respectfully submits that something which may have been "obvious to try" cannot form an adequate basis for a rejection under Section 103. *In re O'Farrel*, 853 F.2d 894, 7 USPQ2d 1673 (Fed. Cir. 1988).

Beale '926 discloses the treatment of osteoporosis by the administration of calcium pyruvate (see Beale '926, col. 5, lines 17-18). However, Beale '926 does not even teach or suggest that any other pyruvate can be used to treat osteoporosis. In fact, Beale '926 never mentions creatine pyruvate, much less teach or suggest the use of creatine pyruvate to treat a bone or cartilage defect, as recited in claim 1; to promote bone growth and mineralization, as recited in claim 22; to improve bone acceptance and osseous integration, as recited in claim 23; or to accelerate healing, as recited in claim 24.

Furthermore, Applicants submit that the range recited in claim 1 does not overlap or lie inside ranges disclosed by the cited references. Moreover, Kaddurah-Daouk, Beale '469, and Beale '926 teach administering pyruvate to subjects in amounts that are much higher than the upper end of the recited range (*i.e.*, 285 mg per day). For example, Kaddurah-Daouk discloses that creatine can be administered in an amount of 2 to 8 g per day (see Kaddurah-Daouk, col. 11, lines 29-31); Beale '469 discloses that "[i]n the method of the present invention, the mammal, preferably human, consumes at least 5 g per day of the pyruvate/cortisol blocker composition" (see Beale '469, col. 6, lines 8-10); and Beale '926 discloses administering the anabolic protein/pyruvate composition to a mammal in the amount of from 1 to 300 g per day (see Beale '926, col. 5, lines 26-28). As such, Kaddurah-Daouk, Beale '469, and Beale '926 all teach away from the significantly smaller amounts recited in claim 1, *i.e.*, 1.4 to 285 mgs per day or 0.0014 to 0.285 g per day.

Finally, Applicants submit that the Examiner has improperly used hindsight reconstruction to pick and choose among isolated disclosures in Kaddurah-Daouk, Meisner, Grant, Beale '469, and Beale '926 to reconstruct the claimed invention. The use of five disparate references from which to pick and choose isolated disclosures without regard to the reference on a whole is indicative of such hindsight reconstruction. In particular, Applicants respectfully submit that *hindsight reconstruction* has been used in the rejection of the present invention to combine a metabolic disorder treatment with a wound healing therapy and a

body building regimen. Such hindsight, however, is improper. Hindsight should be avoided in applying the non-obviousness requirement. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir. 1987), *cert. denied*, 481 U.S. 1052 (1987).

In view of the foregoing, Applicants respectfully submit that *prima facie* obviousness is not established. As such, the rejection under Section 103(a) is in error and Applicant respectfully request that the claim rejections under Section 103(a) be withdrawn.

CONCLUSION

Applicants respectfully request entry of the remarks made herein into the file history of the present application. Withdrawal of the Examiner's rejections and an allowance of the application are earnestly requested. If any issues remain in connection herewith, the Examiner is respectfully invited to telephone the undersigned to discuss the same.

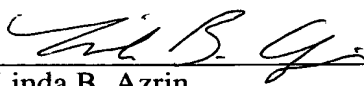
Respectfully submitted,

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